

WITH COMPLIMENTS OF THE AUTHOR.

von Ruck (Karl)

SOME OBSERVATIONS
UPON THE
GASTRO-INTESTINAL DISORDERS
AND THE DIET IN
PULMONARY PHTHISIS.

BY

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SOME OBSERVATIONS

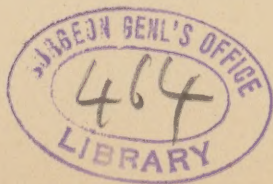
UPON THE

GASTRO-INTESTINAL DISORDERS AND THE DIET IN PULMONARY PHTHISIS.

IN the therapeutics of pulmonary phthisis no class of intercurrent affections is of greater significance to success or otherwise, and none require so frequent attention, as do those which I propose to consider in this paper. The problem of their prevention or removal is never to be ignored, and without the greatest vigilance these complications are almost sure to arise sooner or later, sometimes as most formidable obstacles to improvement, and not infrequently as a determining cause for a fatal result.

In many cases obstinate disturbances of the digestive organs precede, or seem to precede, the actual development of the lung-affection by considerable periods, possibly idiopathic in their nature, but more likely as symptomatic expression of the incipient disease, for the time beyond our diagnostic resources.

Although believing that any long-continued gastro-intestinal derangement may, by reason



of interference with general nutrition, under favorable circumstances, become a predisposing factor to tubercular infection, I cannot ignore the fact that, in the majority of what may be called idiopathic cases, even when continuing for years and leading in time to severe constitutional impairment and cachexia, tuberculosis does not follow ; and I incline more and more to the belief that the cases of so-called pretubercular dyspepsia or pretubercular constitutional decline are symptomatic of incipient disease, as a rule due to infection of the alimentary canal.

The increasing evidence of the unsuspected consumption of tubercular food products, derived from infected and, perhaps, still apparently healthy animals, and the liability to infection of the intestinal tract from tubercular secretion, through the various mediums of common use, such as eating-utensils, napkins, glasses, common drinking-cups in public places, dental instruments (tubercular patients are frequent visitors of dental offices), etc., leaves little doubt that tubercle bacilli find entrance to the digestive organs very frequently ; and adding to this the fact that it is impossible to positively diagnosticate the earlier changes resulting from tubercular localization upon the intestinal mucous membrane, or in the mesentery, lymphatic channels, and absorbent vessels, I believe that primary infection of the alimentary canal is perhaps not so infrequent as has heretofore been held.

I believe this the more, since, upon closer study, I find that the development, symptoms, course, final outcome, and reaction to usual

modes of treatment are apparently different from others, and perhaps peculiar to these cases ; and, although I have but a limited number of recorded cases, observed in a more critical light, and with strong suspicion of their peculiar features and origin, my records of previous cases with termination in phthisis, together with my memory, confirm me in my conclusions.

In the majority of my cases, all from private practice, the records show that the digestive disturbances had their beginning in what was claimed to have been "the midst of good health,"—at any rate, without having previously suffered of dyspepsia. They were all young subjects, sometimes with and at other times without direct hereditary predisposition. Both subjective and objective symptoms on the part of the digestive organs were entirely out of proportion to the constitutional decline, which was manifest in rapidly-resulting profound anæmia, great loss of strength and flesh, occasional and irregular slight elevation of temperature, and the ineffectiveness of all management, diet, and medication was most constant ; yet anorexia, vague and undefined distress in stomach and bowels after eating, constipation, sometimes alternating with diarrhœa, meteorism, seldom nausea, were all that the patients complained of directly. The tongue was seldom coated, physical examination of the digestive organs negative, and in several cases the beginning of some acute illness, like typhoid fever, was noted as being suspected on first consultation.

In all but the three last cases all sorts of treatment, directed to the digestive organs and

the general decline, were adopted, and the changes from one plan to another seemed characteristic in their failure to give relief. Pepsins, maltine, arsenic, stimulants, bismuth, acids, alkalies, castor oil, mercurials, salines and other laxatives, iron and bitter tonics, elixirs and wines of this and of that, liquid foods, solid foods, beef peptones and other artifices, meat juices, milk diet, beef diet, and no diet, mineral waters, rectal feeding, oxygen-inhalations, exercise, rest, all to no purpose, seldom a little better, frequently growing worse, or no improvement, are the notes appended to these cases; examinations are recorded of the lungs, the heart, the liver, the spleen, the stomach and bowels, the pelvic organs, the nose and throat, the urine, the fæces, as a rule with negative results. If anything had been thought to have been found, like some affection of the throat, uterine displacement, leucorrhœa, or a hemorrhoid, its treatment had no influence. The only constant finding was the increasing anæmia and diminution in number of red blood-corpuscles, and its treatment was unsuccessful. The outcome was in the course of some six months, seldom later, a pulmonary phthisis, once tubercular peritonitis, and the last three cases recovered.

Well-pronounced gastric catarrh was not present, at least not in the beginning, but resulted several times from heroic medication, nor was there evidence of lack or perversion of the gastric secretions. I frequently tested the contents of the stomach by Ewald's method without obtaining any clue, the washing of the fasting stomach only occasionally showed a few remains of food or a little mucus

It is certainly not the rule that such apparently non-organic disease of the digestive organs proves so thoroughly obstinate, or that in such obstinate cases we cannot find more tangible evidence ; indeed, after having had a few of such cases, I knew what was eventually coming, after having been so completely baffled and outwitted, and I never was mistaken.

The three last cases treated, and which apparently escaped their fate, did not, however, do so by mere chance and accident. The usual means employed had been equally ineffectual, and considerable inroads upon their health had already occurred, when, under the suspicion of beginning phthisis, I adopted what may be called superalimentation, and, to give them a full chance, I also administered creosote in the first two cases for a considerable period, and in increasing doses to 24 minims per day.

I feel, however, inclined to give the credit to the forced diet, as the improvement set in earlier than could be expected from any specific medication in the period of small doses, and because the last case recovered under the diet alone.

In the diet of these cases all artificial foods were excluded, and preference given to a plain, simple, mixed diet, in which the hydrocarbons were considerably in excess of the physiological standard, consisting of milk, eggs, butter, bread, rice, boiled cereals, sugar, fruit, and beef (the latter only once a day). The patients were urged to take as much as possible, despite the existing anorexia, or the complaint of fulness, meteorism, etc., but frequently recourse had

to be had to feeding with the tube, especially in one case, which absolutely refused to take a sufficient amount of food, for the first few weeks of such management. The stomach was washed out in all cases once a day in the beginning, and less frequently thereafter, until substantial gain was made, and less discomfort was noted after eating. Large quantities of food were thus given—for instance, from two to three quarts of milk, the yolks of four to eight eggs, three large saucers of rice, oatmeal, imperial grannum, or cracked wheat, with milk and sugar, a number of slices of bread and butter, about six ounces of scraped beef, occasionally some boiled ham, frequently three or four large baked potatoes with plenty of butter—in the course of twenty-four hours. We, of course, had to begin with smaller quantities, but the amounts above indicated were reached, and sometimes exceeded, in the course of two or three weeks, and kept up thereafter with as much variation as was possible to suit the inclinations of the patient.

The bed was kept absolutely for the first month, and massage substituted for exercise.

When the tube was used for feeding, milk, yolks of eggs, sugar, sometimes gruels of cereals, and scraped beef were chiefly depended upon.

In each case the cure was completed within three months, and appetite and relish for food was noted, especially after the anæmia had partially subsided and the patient had made material gain in flesh, and was allowed to be up. During the latter part of the manage-

ment the patients were allowed to eat in amount according to their inclination, having reached their normal weight. In two of the cases well marked phthisical family history existed. All three patients are well and free from lung symptoms at the present time, after fifteen, eighteen, and thirty months, respectively, since having been discharged.

It is, of course, beyond demonstration that these cases would have subsequently shown manifest tuberculosis had they been managed otherwise, or that their symptoms and decline would not have been arrested by other means, or would not have improved in the end, and such objections may be urged in any case, tending to follow an unfavorable course, when, by some means or other, disaster is averted. I can only say that they seemed to present the same symptomatology and course, and the same obstinacy to all usual methods of treatment, as did the preceding cases which ended in phthisis.

In my present field of labor I see little of incipient tuberculosis, and my opportunities for further investigations are therefore limited, and I call attention to my past experience, particularly in the hope that others may take up the matter in order to determine if the cases described and their peculiar features are not really due to incipient disease, due to tubercular infection of the alimentary canal.

In now speaking of the gastro-intestinal disturbances as they occur in the course of the established pulmonary phthisis, I propose to confine myself to those of the stomach and bowel, which are still, at least in a degree,

amenable to our therapeutic resources ; and, although recognizing the importance of disturbances in any of the organs lying within the portal circulation, to limit my paper I shall refer to them only incidentally.

I have already stated, in the beginning of this paper, that success in the treatment of phthisis depends, other things being equal, upon the integrity of the organs of digestion and assimilation, and when these are hopelessly diseased, as from glandular atrophy and inveterate catarrh, amyloid degenerations, fatty or tubercular liver, extensive tubercular processes of the intestine, and infiltration and plugging of the lymphatic channels, mesenteric glands, etc., nutrition becomes impossible, and the case must end fatally on account of such complications alone.

One of the most frequent causes of temporary loss of appetite in the course of phthisis is fever ; and, apart from its proper management, much circumspection in diet of such fevering patients is essential to prevent rapid loss of flesh on one side and the ill consequences of acute indigestion on the other. Occasionally it happens that fever patients eat heartily, but in these also the digestive organs will finally fail if their diet is not properly regulated. Milk, with the well-cooked and thoroughly-boiled grains, bread and butter, soups and gruels, occasionally a soft-boiled or raw beaten egg, and, according to the state of the bowels, with the addition of stewed fruits, should be chosen from for periods when the temperature is rising or at its maximum ; and heartier meals should be

given only after well-marked decline of fever and during the afebrile hours of the day. During fever it is best to feed little and often, as an overloaded stomach or larger quantities of nitrogenous food are almost sure to increase and maintain a higher temperature for at least several hours after meals. Sooner or later such errors in diet will lead to uneasiness, meteorism, and diarrhœa, with or without colicky pains, with consequent rapid loss in flesh and strength. Under close observance of the above rules I have in many of my cases been so fortunate as not only to prevent serious loss, but also to maintain the weight, or even to increase it, during protracted fever.

Another cause of digestive disturbances lies in physical and mental overexertion. Whatever amount of exercise may be permissible, there should always precede and follow a sufficient amount of rest for each principal meal. Such rest need not confine the patient to the house or room, especially in a favorable climate. Under no circumstances, however, should a patient eat heartily when fatigued. In a recent paper on the detrimental effects of overexertion in pulmonary phthisis, presented by myself to the American Climatological Association at the session in Denver, Col., I have shown the frequent loss of appetite and subsequent nutritive disturbances as the results of overexertion observed by me, and have no doubt that other physicians have had similar experience.

In this connection I desire to warn, especially female patients, of tiresome toilet-prep-

arations for meals or for their appearance in the public rooms of fashionable hotels at health resorts. Such hotels are for this and many other reasons unsuitable for residence of patients who seek recovery from pulmonary disease.

The returning appetite, after subsidence of acute processes and complications, and when, under favorable circumstances, real and continuous improvement would follow and perhaps continue; and also the increased desire for food, so frequently seen in patients immediately upon their arrival at elevated climatic resorts, often become a snare, and lead to gastro-intestinal complications, and indirectly to relapses of acute processes, when the digestive powers are not equal to the tax imposed by patients reduced in general health, but who are delighted to experience again a desire for food.

Unless, under such circumstances, the quantity and quality of food taken is promptly regulated for each individual case, and an increase allowed but slowly, there is nothing surer than a loss of all the gain that has been made, and often of much more, during the time the digestive organs were tolerant of such abuse. But few patients realize the need of circumspection, or are able to govern themselves sufficiently, when, after long indifference to food, they again realize a keen relish, and often their desire to gain rapidly in flesh and strength gets the better of their judgment, even when the danger has been pointed out to them.

In improving patients who have but little or no fever and are eating well I have often ob-

served the tendency to treat themselves to favorite dishes or to eat immoderately of them. These patients must be made to understand that they eat for health, and that they cannot afford to trifle with their digestive organs. I well remember a patient who was doing very well indeed, and who acquired a serious gastro-intestinal catarrh from "candy and peanuts," from which she did not recover for nearly a month, during which active lung symptoms with subsequent destructive changes also occurred, and led to a fatal issue. I can see no reason why this patient should not have continued in her improvement had the treat of candy and nuts been avoided. In another case, with similar results, it was watermelons and sweet cider, and I can give a number of such instances.

The diet in such cases should always be simple, and as long as increase in flesh is desired, the hydrocarbons should predominate. After the patient has reached his natural weight, and when more active physical exercise is allowable, the nitrogenous foods should be given to the full physiological standard. In no case which is steadily gaining is it essential, or even best, to select such foods which are believed to require the shortest time for digestion, and predigested and artificial foods at such periods are positively harmful.

The food, as exercise is increased, must have some "staying quality," and need not, so to speak, melt in the mouth. Sirloin and round steaks are then preferable to tenderloins and sweetbreads, and good roast beef to delicate birds and spring chicken. Ham

and eggs are well borne ; indeed, boiled ham I have found to have been well digested when I found as regularly in the washings of the stomach the undigested particles of quail.

Artificial food products, even if they contain all the elements which their labels claim, and are ready to enter the circulation at once when reaching the stomach and bowel, as is said of most of them, can only be of use when the digestion of other food has been found impossible ; then they should be given in very small quantities, and every fifteen or twenty minutes, to derive the best results. It would certainly be unwise and wasteful to at once flood the circulation with larger quantities of food products than can be oxidized and assimilated ; and, when nature made the digestion and absorption gradual, and extending to from one to six hours, she meant continuous nutrition and appropriation rather than a momentary flooding, so to speak, which would fall short of oxidation, and simply prove an additional tax in their elimination.

When food is given, the digestion and absorption of which requires but little time, it must be given in smaller quantities, relatively oftener ; and a mixed diet for patients free from fever, who take three regular meals, should be so chosen that, besides the readily-digested articles, there should be also those which require a longer time for digestion, so that the absorption be not excessive at one period and " nothing " for a number of hours before the next meal, but equal and continuous for all the hours to shortly before the next meal, allowing physi-

ological rest for a portion of the night-time. The consumption of large quantities of fluids with meals should always be avoided, especially by patients who eat well of solid foods; it is positively injurious for them to drink from two to six glasses of iced milk, and then eat a regular and hearty meal in addition. I prefer, however, one glass of milk to a glass of water, if only a moderate meal is taken, and recommend to drink frequently of water between meals.

These details are of great importance, if we desire the best results in nutrition, and I believe that I succeed best by observing them. At any rate, it is a rare thing for my patients not to gain steadily and surely in flesh and strength under such management, and the exceptions occur only during active disease and complications, and when in the arrested disease the respiratory surfaces have been so diminished by fibroid and cicatricial changes that the respiratory capacity is far below par. In such patients the quantities of blood and amount of flesh accommodate themselves to the powers of oxidation; with increasing shrinking, they lose in flesh in proportion as the vital capacity is diminished, and this in the absence of all fever and other complications, in the presence of a good appetite and no matter how much food we may give. The excess of food taken is then shown by two or three large evacuations per day, and by the appearance in the urine of evidence of imperfect or partial oxidation.

If we succeed by the use of the pneumatic cabinet to increase the vital capacity, or, by the administration of oxygen in the form of

inhalations, oxygen bath, oxygenated water, or rectal oxygen enemas, to temporarily augment the quantity of the blood, we see a corresponding increase in body weight; the former treatment being preferable, as it removes the cause, but the oxygen may be used in conjunction, with the hope to prevent further loss, until the effects from the pneumatic treatment are obtained.

A most prolific source of indigestion, first temporary and finally leading to gastric catarrh, is the indiscriminate use of alcoholic stimulants. In the management of phthisis these must always be looked upon as medicaments, and require for their administration the existence of a definite indication, when the dosage needs to be directed by the physician, and the quality and time of administration chosen, the same as is the case with other drugs. It is simply absurd to tell a patient to take all the whiskey he can. I have known cases who, under such advice, succeeded in taking a quart a day, and much to their detriment. That occasionally a case improves while taking whiskey is quite to be expected, and more still would it be benefited if the administration of it would be reserved for time of need, and the amount given governed by the effect upon the circulation and digestion.

Gastric catarrh never improves as long as large doses of strong alcoholics are given; on the contrary, it grows worse, and I have made it a rule never to make use of whiskey or brandy in such cases. Their withdrawal is often all that is necessary for improvement. If stimulants seem indicated, rest and ingestion of more food soon obviate their need,

and only in extreme cases, in the partial collapse with subnormal temperatures, do I give them, and then per rectum when severe gastric catarrh is present.

To aid the digestive organs, and perhaps oftener to comply with the wishes of patients who have been accustomed to wine or beer with their principal meal, I allow a glass of red Hungarian or light Rhine wine, and, really, I have seen patients who seemed to eat and digest better with the wine than without it. When wine or beer is taken with a meal, it must be to the exclusion of other fluids, including milk and coffee.

Chronic gastric catarrh, as such, requires most painstaking management of diet, and frequent washings through the tube to get any improvement. Rest of the digestive organs, by greatly limiting or temporarily withdrawing food, is not to be thought of in phthisis, and I have never succeeded that way in any case. On the contrary, the amount of food must, as a rule, be increased, even under the protest of patients, and fermentation prevented by regularly washing away the mucus and the remains of the previous meal shortly before the one or two heartiest meals in the day. The foods must be simple, the hydrocarbons in excess, and the patient kept in bed, substituting massage for exercise.

In cases where I found no free hydrochloric acid in the stomach contents one or two hours after trial meals, I have seen much benefit from its regular administration in small doses every fifteen or twenty minutes for several hours after eating, and under its use, together with frequent washings, and

in some very obstinate cases, I have finally succeeded in much improving the anæmia and nutrition, with re-establishment of the natural secretion. It was seldom, however, that I obtained a real cure of gastric catarrh, and when it occurred the cases were not severe or old ones. The results of treatment were, however, for the time being, satisfactory, as I obtained increase in flesh and strength, and a great amelioration in the gastric symptoms in all cases. What a continuance of such treatment might accomplish, if kept up for long periods, I cannot say. I have never had a patient willing to submit to washings any longer than was needful for material improvement; and they preferred to rest then, to resume upon the return of old symptoms, which was often necessary.

Of the so-called symptomatic (reflex) indigestion in phthisis, I see less and less the more I take pains to thoroughly investigate my cases, in most of which I find the causes of the apparent reflex gastric disturbances to be really due to errors in diet, overexertion, existing anæmia, the state of circulation, abuse of alcohol, more or less severe gastric catarrh, sometimes accompanied by dilatation and ectasia of the pyloric or cardiac orifices.

As due to reflex irritation I have looked upon such cases in which there was hyperacidity and markedly increased motility, and in which any ingested food leaves the stomach in an incredibly short period of time. I have thus seen food taken and passed by the bowels in the course of twenty minutes, and found the stomach empty, but extremely acid

after that time. Alkalies are here of no benefit whatever. Opiates give temporary relief by controlling the symptoms sufficiently so that some digestion may take place. In most of my cases the condition improved and subsided gradually, a few times abruptly, but apparently not as the result of treatment.

Digestive disturbances also occur, when considerable areas of the pulmonary circulation are more or less obstructed by reason of inflammatory deposits, fibroid and cicatricial changes, especially in the presence of a weak heart. They are then due to venous stasis and passive hyperæmia in the portal system, and give rise to a variety of symptoms, according to the degree of the inability of the right heart to properly propel its contents and empty itself, and also to the degree of co-existing emaciation. In the earlier stages, when by the wasting an equalization between the total blood quantity and the unobstructed lung surface and heart powers has been arrived at, the symptoms subside again. In more advanced cases absorption becomes seriously impeded, and almost entirely so, by pressure upon the absorbent vessels by the accumulating intestinal gases, which on account of the overfilled portal system are no longer readily absorbed. Aspiration of the gas, through the rectal tube or by puncture, is then our only means to give temporary relief. Gastric and intestinal antiseptics and antifermentatives avail nothing, nor do opiates control the frequent attacks of diarrhœa more than momentarily, and I believe then more by their action upon the heart than by their effect upon the bowel. Rest in the re-

cumbent position, and cardiac stimulants, and the withdrawal of fluids as far as possible, have given me the best results. The diet should be light, dry, and limited in quantity until improvement sets in.

I have seen the above symptoms develop more especially after subsidence of acute processes of extensive character, and the cessation of high fever coincident with occurrence of subnormal temperatures, but also several times abruptly, as the result of physical overexertion upon the heart.

